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tend to have more crystal aging at the beginning of a deployment period. In any event, prior to deployment, a characterization curve for a clock's crystal can be determined by plotting crystal aging vs. time over an extended period of days, such as fifteen to twenty days. In operation, the crystal frequency can be measured at the time of deployment and at the end of deployment. Utilizing this information, the applicable portion of the aging curve can be identified and the seismic data collected over the period can be adjusted accordingly.

Of course, one process to minimize the effects of crystal aging is to preage a clock's crystals prior to deployment of the unit. This is somewhat equivalent to initiating operation of the unit prior to deployment in order to permit the unit to stabilize as described above. By preaging crystals, the exponential portion of the characterization curve can be avoided such that the correction information is simply linear in nature. In other words, presaging stabilizes the aging slope and simplifies

In this regard, each time a seismic unit is powered off and back on, the clock's crystals must be re-characterized. However, over multiple cycles of operation, the linear portion of the aging curve, i.e., crystal aging stabilization, is reached more quickly. Notwithstanding the foregoing, whether crystals are preaged or not, none of the prior art devices or seismic data processing techniques correct for crystal aging as described herein.

While certain features and embodiments of the invention have been described in detail herein, it will be readily understood that the invention encompasses all modifications and enhancements within the scope and spirit of the following claims.

What is claimed is:

1. A seismic data collection unit comprising:
 - a. a fully enclosed, single case formed of a housing, said case having a wall defining an internal compartment within said housing;
 - b. at least one geophone internally fixed within said housing;
 - c. a clock disposed within said housing;
 - d. a power source disposed within said housing; and
 - e. a seismic data recorder disposed within said housing;
 - f. wherein each of said elements b-e include an electrical connection and all electrical connections between any elements b-e are contained within said housing; and
 - g. wherein said geophone is coupled to said seismic data recorder to permit seismic signals detected by said geophones to be recorded on said seismic data recorder;
 - h. wherein the single case comprises a first plate having a first periphery and a second plate having a second periphery, wherein the plates are joined along their peripheries by a circular wall.
2. The unit of claim 1, wherein said unit is self contained and requires no external communications or controls during recording.
3. The unit of claim 1, wherein the case is watertight.
4. The unit of claim 1, wherein said at least one geophone is disposed adjacent a plate.
5. A seismic data collection unit comprising:
 - a. a fully enclosed, single case formed of a housing, said single case having a first plate having a first periphery and a second plate having a second periphery, wherein the plates are joined along their peripheries by a circular wall, said wall defining an internal compartment within said housing;
 - b. at least one geophone internally fixed within said housing;
 - c. a clock disposed within said housing;

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d. a power source; and

e. a seismic data recorder disposed within said housing.

6. The unit of claim 5, wherein said unit is self contained and requires no external communications or controls during recording.

7. The unit of claim 5, wherein , wherein each of said elements b-c include an electrical connection and all electrical connections between any elements b-c are contained within said housing.

8. The unit of claim 5, wherein the power source includes a fuel cell attached to the case.

9. The unit of claim 5, wherein the power source includes a solar cell attached to the case.

10. The unit of claim 1, wherein the case defines an external surface, and the external surface is provided with ridges to enhance coupling of unit with the earth.

11. The unit of claim 1, wherein the case defines an external surface, and the external surface is provided with at least one spike to enhance coupling of unit with the earth.

12. The unit of claim 1, further comprising

- a. three geophones disposed within said case; and
- b. a compass.

13. The unit of claim 1, wherein the geophone is a multi-component geophone capable of measuring seismic signals in at least two directions angularly oriented to one another.

14. The unit of claim 1, further comprising a GPS location transducer.

15. The unit of claim 1, further comprising a radio unit.

16. The unit of claim 1, further comprising an external connector in electrical communication with at least one of said geophone, clock, power source and seismic recorder, said connector extending through the wall of said case and disposed within said wall so as to be set in from the external surface of said wall.

17. The unit of claim 16, further comprising a water tight, pressure resistant cap disposed over said external connector.

18. The unit of claim 1, further comprising an internal control mechanism for controlling all functions of the unit while deployed.

19. The seismic data collection unit of claim 5, further comprising:

- a. at least four seismic data geophones disposed within said case, wherein at least three of said geophones are disposed adjacent one another and at least one geophone is disposed in a location within said case removed from said other geophones.

20. The seismic data collection unit of claim 5, further comprising a case in which the at least four seismic data geophones are disposed, wherein said at least three geophones are disposed in said case to maximize detection of seismic energy and said at least one geophone is disposed in said case to maximize vibration of said case by said removed geophone.

21. A seismic data collection unit comprising:

- a. a fully enclosed, single case formed of a housing, said single case having a first plate having a first periphery and a second plate having a second periphery, wherein the plates are joined along their peripheries by a circular wall, said wall defining an internal compartment within said housing;
- b. at least one geophone internally fixed within said housing;
- c. a clock disposed within said housing;
- d. a power source disposed within said housing;
- e. positional electronics disposed within said housing;
- f. orientation electronics disposed within said housing; and
- g. a seismic data recorder disposed within said housing;